



MBTA Bus Facility Modernization Program

New Arborway Bus Maintenance Facility and Bus Electrification Project

December 9, 2021

How to Participate in the Meeting

Virtual Public Meeting
December 9, 2021
6:00 p.m.

Please use Zoom's "Raise Hand" feature to indicate if you have a comment, then wait for the moderator to give you permission to speak.

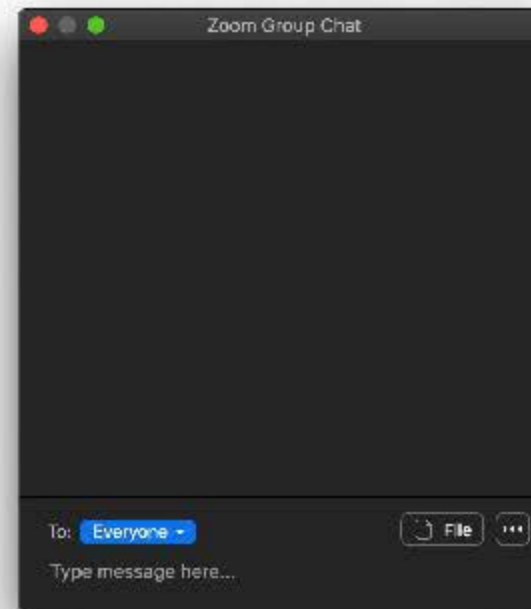
By default, all attendees are muted so that only the presenters can be heard. When you raise your hand, it alerts the moderator that you'd like to speak. The moderator will unmute attendees to ask questions in the order that they raised their hands.



To speak, click
"Participants"
then
"Raise hand"



Send a chat
to the moderator



***9**
Raise Hand

Agenda

- Project Overview and Bus Modernization Program Background
- Existing Conditions at Arborway Yard
- Preliminary Concept for New Bus Maintenance Facility
- Next Steps



MBTA New Arborway Facility - Vision

When completed in 2027, the MBTA's New Arborway Garage will:

- Almost entirely **eliminate emissions from buses** in the southern neighborhoods of Boston, including in some of the lowest income communities in the city
- Support **more reliable bus service**, along many of the MBTA's most heavily used routes
- **Increase capacity** for bus riders by allowing more routes to be served with larger, 60' articulated buses
- Replace an unattractive, and mostly outdoor bus facility with an **attractive and modern, fully-enclosed facility**
- **Support community vision for Washington Street**

Bus Fleet and Facility Modernization Goals



- Convert the entire bus fleet to zero emissions technology
- Modernize all bus maintenance facilities
- Transition to a more uniform fleet replaced on a predictable, annual cycle
- Allow for an increase in fleet size

Benefits of Battery Electric Buses

The MBTA aims to fully electrify its bus fleet by 2040 – one of the most aggressive electrification timelines in the United States – using battery electric buses (BEBs)

- BEBs have no tailpipe emissions, resulting in **better air quality in the communities** the MBTA serves compared to CNGs or diesel hybrids
- 100% of MBTA electricity comes from **renewable sources**
- Just like electric cars, BEBs will be **quieter on the road** and when returning to the new Arborway facility



Photo by Cait Sith810

What's a Modernized Bus Facility?



- New Quincy facility to usher in the modern era for MBTA
 - First BEB facility, supporting the transition to a zero emissions fleet
 - First all indoor facility, built for 120 buses to support fleet expansion
- First priority project replaces 100+ year-old existing Quincy garage that only accommodates oldest diesel buses; poor conditions hinder workforce ability to work effectively

Arborway Project Drivers



At the April 26, 2021 FMCB meeting, the Bus Modernization team identified Arborway as the program's next priority after Quincy, due to the following factors:

- **Equity:** Number of routes serving communities with high proportions of low income and POC households
- **Condition:** Temporary, inadequate, outdoor condition of facility
- **Fleet:** Project must be complete ahead of 2028/29 replacements of 118 CNG buses in existing facility

History of Arborway Site

- **1895** – Forest Hills Carhouse opens
- **1917** – Surface yard expanded for streetcar storage
- **1925/6** – New bus garage opens and Lotus Place Carhouse replaces original carhouse
- **1950s** – Lotus Place Carhouse used to maintain diesel buses and trolleybuses, in addition to streetcars
- **1962** – MBTA headquarters opens at 500 Arborway
- **1981** – Bus operations transferred to Bartlett Street Garage (planned temporarily, with plans for 200 bus facility at Arborway)



Arborway Yard in June 1967

Photo Credit: David Wilson, www.flickr.com/photos/davidwilson1949/11504375843/in/photostream/

Context for Arborway Bus Facility

1998 – Community Planning Committee for Arborway Yard (CPCAY) convened to address community concerns and engagement needs around MBTA's plans for the future of Arborway Yard.

2001 – CPCAY facilitated drafting of Memorandum of Understanding signed by City of Boston and MBTA.

2003 – Arborway temporary garage opened to replace Bartlett Street facility in Roxbury with the expectation a permanent facility would soon replace it.

2010 – MBTA completed permanent facility design, but construction funding did not materialize after MassDOT/MBTA reorganization.

2010 to today - CPCAY continued championing the project, recently transitioning its charter to Jamaica Plain Neighborhood Council (JPNC). City developed PLAN: JP/ROX, which reaffirms housing priority, especially affordable housing.

April 2021 – MBTA presented Arborway as next priority in program at FMCB meeting.

Summer/Fall 2021 – MBTA initiated design process – conducting internal scoping activities, as well as conducting initial outreach (JPNC, Emerald Necklace Conservancy, City of Boston/BPDA).

Memorandum of Understanding



CITY OF BOSTON · MASSACHUSETTS

OFFICE OF THE MAYOR
THOMAS M. MENINO

MEMORANDUM OF UNDERSTANDING BETWEEN THE CITY OF BOSTON AND THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

This Memorandum of Understanding is entered into on this 24th day of April, 2001, by and between the City of Boston (the "City") with a principal place of business at City Hall, Boston, Massachusetts 02201 and the Massachusetts Bay Transportation Authority (the "MBTA") with a principal place of business at the Transportation Building, Ten Park Plaza, Boston, Massachusetts 02116.

It represents the culmination of an exhaustive comprehensive and collaborative planning process between the City, the MBTA and the Community Planning Committee for the Arborway Yard (the "CPCAY") as described in the November 16, 1999 Memorandum of Understanding between the City and the MBTA.

The following agreements are based on information provided on the Topographical Survey and Planimetric Map [15N-8E] and provided by the City of Boston. In view of the design process that is under consideration, the MBTA will be obliged to perform a more exacting survey of the site, inclusive of the City Street Lighting Pole Yard (the "City Pole Yard") and their abutting land.

To the extent that this process reveals any discrepancies between the original City Topographical Survey and Planimetric Map [15N-8E], the total land area assumptions will be adjusted accordingly.

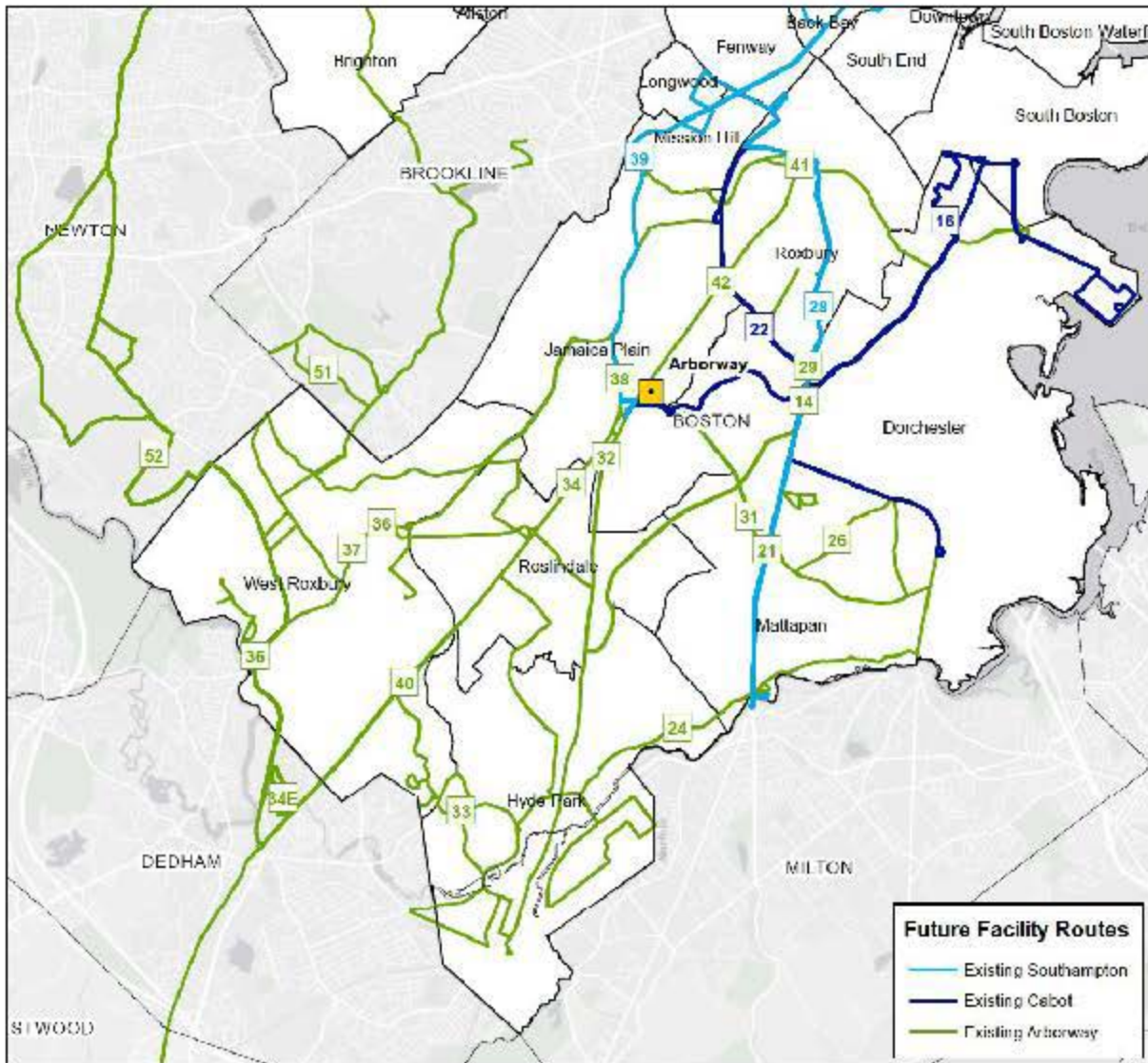
For contextual reference, we are providing the following site plans for review:

- City of Boston Topographical Survey & Planimetric Map;
- MBTA-COB-CPCAY Revised Option-T with Site Analysis, May 2001

Now therefore, the City and the MBTA agree as follows:

- Contains 21 specific items of agreement on:
 - Fleet makeup
 - Site access
 - Emerald Necklace connectivity
 - Parking
 - Land use and ownership
 - Design process coordination
 - Environmental safeguards and others
- States MBTA to transfer target of 8 acres on Washington side for community uses

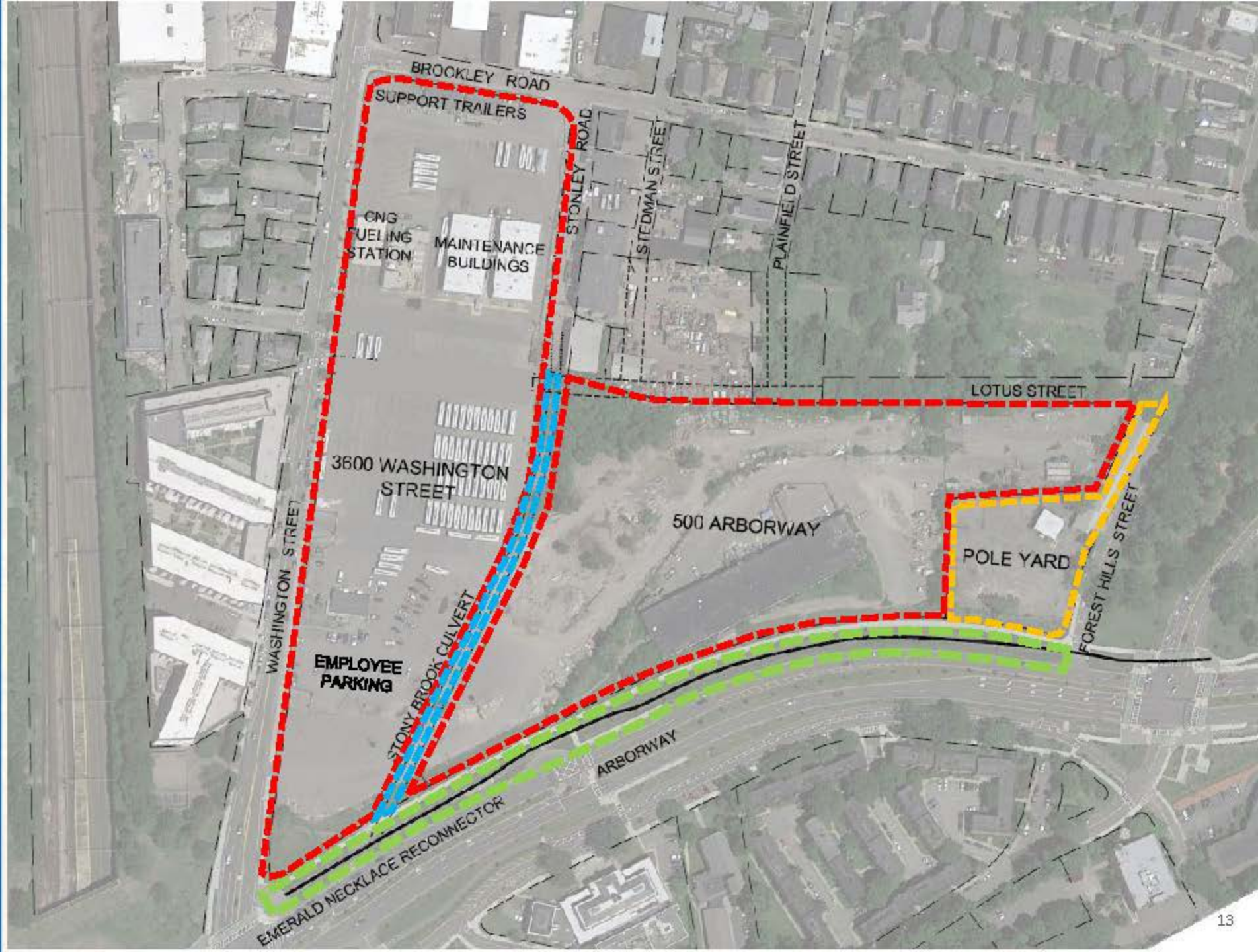
Program for the New Arborway Facility



- Expands fleet from **118 CNG buses to 200 battery electric buses** to transition both existing routes and additional routes in transit critical communities in Roxbury/Dorchester/Mattapan
 - **40% local buses in Boston will use BEBs upon completion**
- **Expanded capacity** for 60' buses
 - Route 32 to be upgraded to larger buses
 - Existing 60' routes – #28 on Blue Hill Ave and #39 on Centre Street – shifted to Arborway and provided with battery electric buses
 - Better meet demand as MBTA redesigns bus network

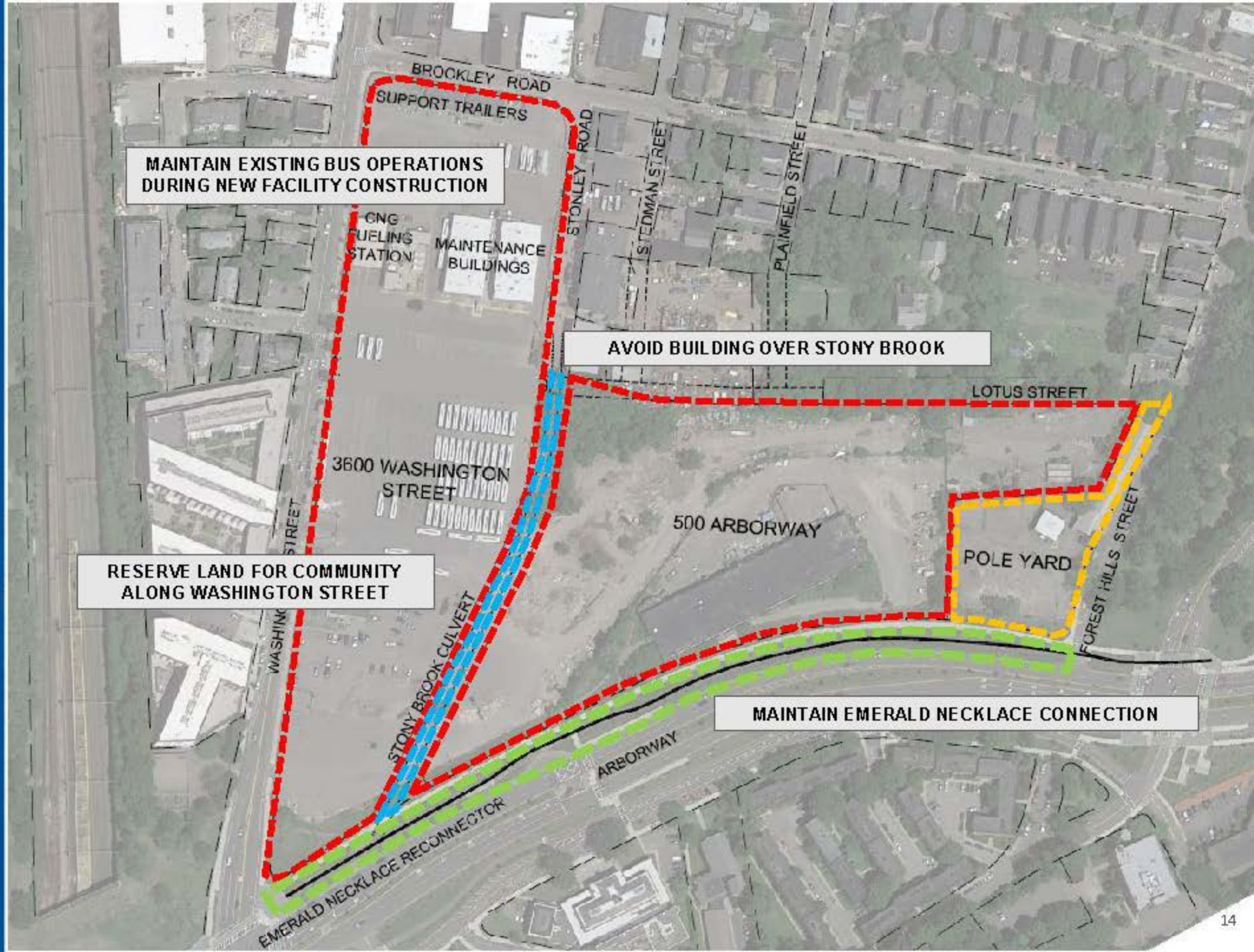
Existing Conditions

- CNG bus maintenance and outdoor storage along Washington Street
- MBTA archive and materials lab in 500 Arborway building
- Pole Yard functions as City of Boston zero waste facility



Existing Site Constraints

- Modern, all indoor facilities require large, rectangular shaped footprints
- Stony Brook culvert bisects site
- Washington Street parcel contains existing operations and is preferred for community uses
- Arborway parcel provides width and length needed with use of Pole Yard



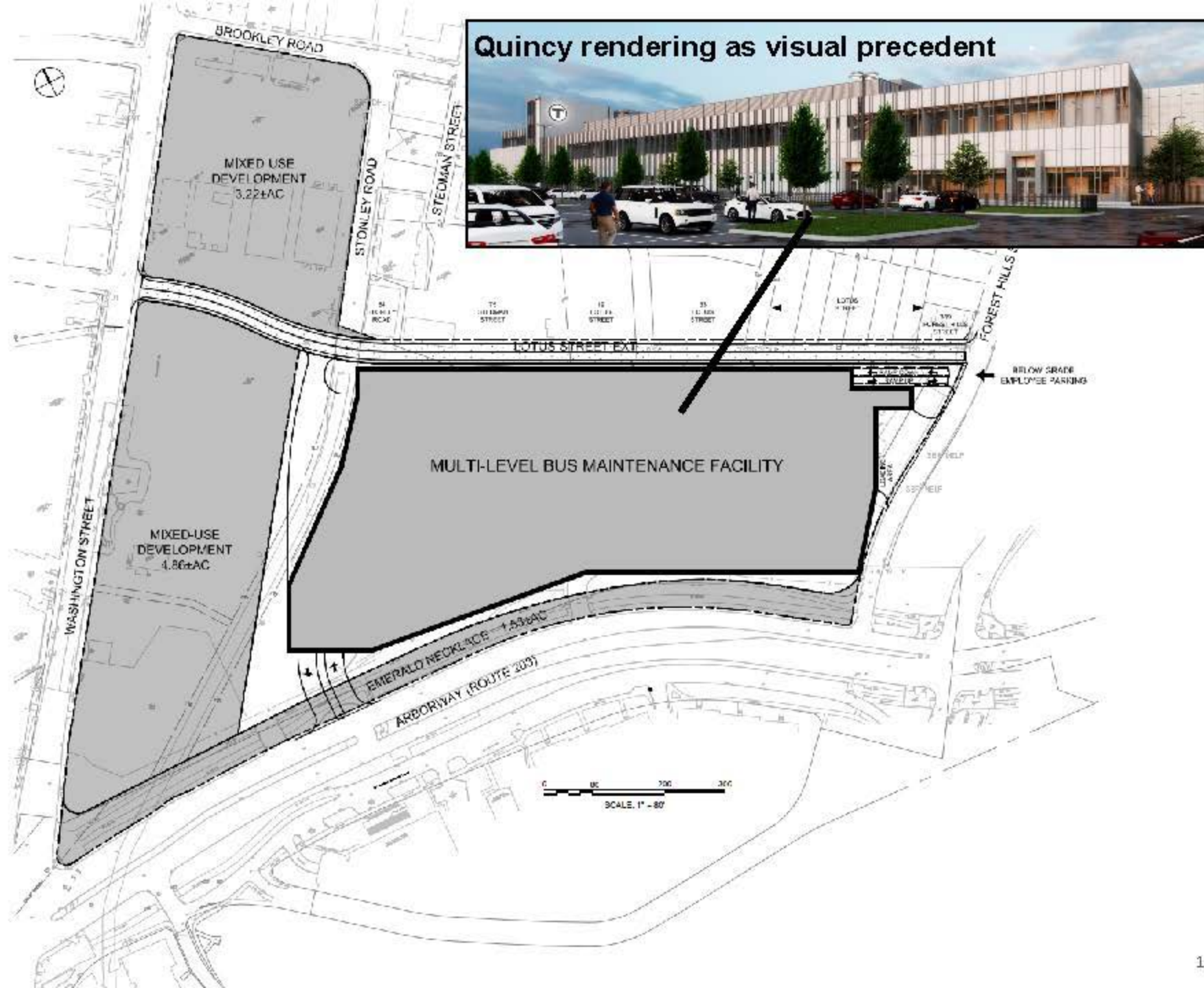
Concept: Site Overview

- **8 acres along Washington Street** for community use, wide enough for two rows of development with a variety of footprints, as envisioned in PLAN: JP/Rox
- **Lotus Street** as public ROW
- **Emerald Necklace** connection



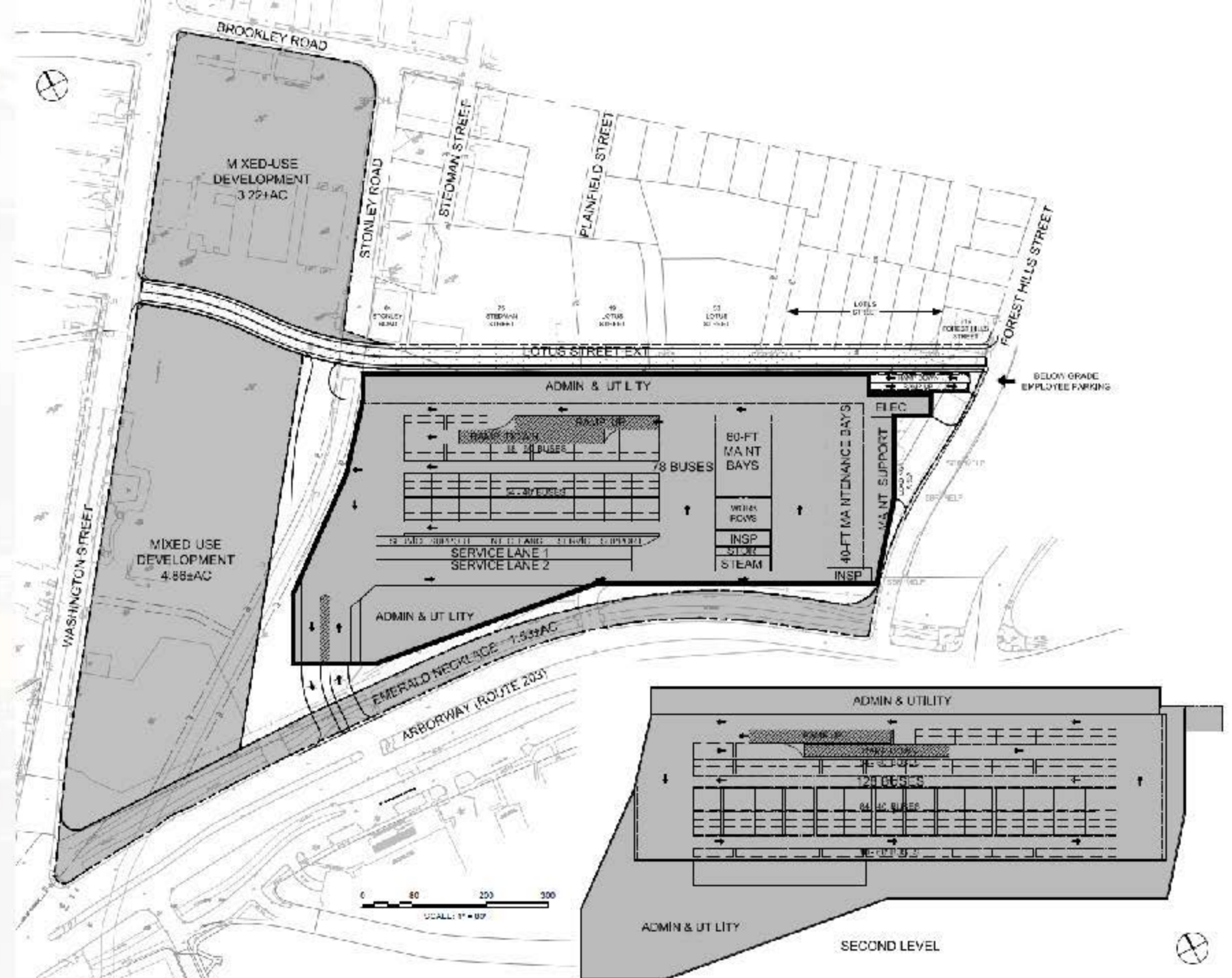
Concept: Building Overview

- **200 bus capacity**
- **Minimize building footprint** with two levels of bus operations and underground employee parking
- **All indoor operations**, including queuing
- **Minimizes fossil fuels** and maximizes energy efficiency in building (heating, etc.)



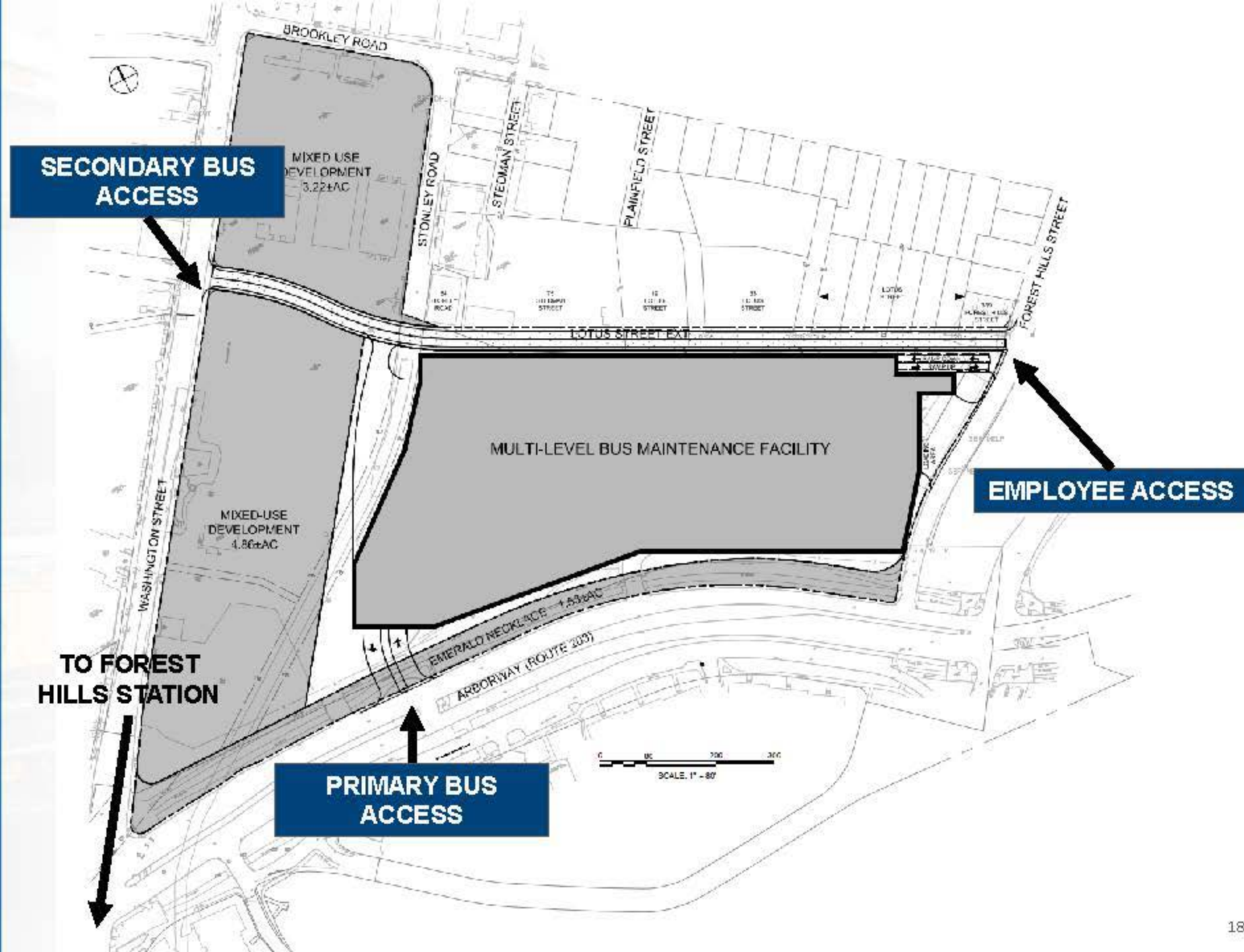
Concept: Interior

- Maintenance, charging and storage for **mix of 40- and 60-foot buses**
- **Administrative space** along Lotus Street, Arborway
- **Building height** comparable to surrounding new development



Concept: Site Access

- Arborway intersection requires coordination with City of Boston to implement improvements to meet operational needs



Concept: Bus Electrification

- **Overhead charging** using pantograph system
- **Software** will help orchestrate bus charging and dispatch
- **Utility coordination** to identify upgrade needed
- Evaluate opportunities for **supplemental charging along routes**



Edmonton Transit Service (ETS) battery electric buses charging by overhead pantograph charger.



Timeline

- **0-15% Design Phase – Fall 2021 to Spring 2022**
 - 15% design underway
 - Geotech borings to support design planned for mid-December
 - Environmental review process commenced
 - Additional stakeholder outreach
 - MBTA 15% Design Meeting in Spring 2022
- **15-100% Design Phase* – Summer 2022 – 2024**
 - MBTA-run public meetings continue
 - Environmental review and permitting
- **Targeted Construction Start* – 2024**
- **Targeted Completion – end of 2027**

* Funding currently being identified

Check www.mbta.com/arborwaybus for updates.

Email ArborwayBus@mbta.com to get on our list!

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